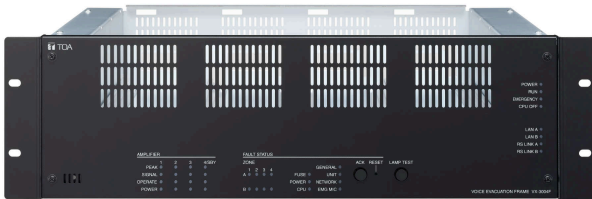


VX-3004F

VOICE EVACUATION FRAME 4AB



The VX-3004F is a device designed to control the voice evacuation announcements of TOA's VX-3000 Series rack-mount type voice evacuation system which is compliant with the European Standard EN54 for fire alarm systems. It has audio input terminals and can output the amplified audio signals to the speaker lines when the optional power amplifier modules are mounted.

It is possible to make an Emergency Warning Broadcast assigned a higher priority than the Emergency broadcast. Two patterns of the Emergency broadcast can be activated simultaneously. Compatible with network, the system can be configured in distributed arrangement.

Features include the following functions: Digital signal processing function that enables appropriate acoustic adjustment for individual input sound sources and output areas, Feedback suppressor function that automatically suppresses acoustic feedback when it occurs, VOX function that allows start/stop control of broadcast by way of an audio trigger, and ANC function that enables an ambient noise control. (The ANC function distinguishes between the unit's output sound and the ambient noise. The unit's output sound is not detected as noise.) Indicators that show such statuses as fault status and power amplifier signal status are provided. It has 4 speaker output channels, each of which is provided with A and B lines to enable duplication of the speaker lines. Up to 4 power amplifier modules can be mounted. The 4-channel amplifier can be used either for zone output or standby use. As the VX-3004F is equipped with Standby amplifier input/output terminal, the standby amplifier, when mounted, can be shared among VX-3000F units.

Key features

- Up to 4 amps (1 zone - 1 amp, 4 AB-zones or 3 AB zones + standby amp)
- All mandatory indications by EN54-16
- Status indication for each speaker line
- Fault acknowledge and lamp test button
- Input DSP: flexible filter types and compressor
- Output DSP: flexible filter types, compressor and delay up to 2.7 sec.

Specifications

Power Source	20 - 33 V DC, removable terminal block (4 pins)
Power Consumption	24 W (frame only) at 33 V DC input, 90 W (RS LINK: 2 A output) at 33 V DC input
LAN A, B	<p>Number of Connectors: 2 (LAN A, LAN B)</p> <p>Network I/F: 100BASE-TX</p> <p>Network Protocol: TCP, UDP, ARP, ICMP, RTP, IGMP, FTP, HTTP, NTP</p> <p>Spanning tree Protocol: RSTP</p> <p>Audio Transmission System: TOA Packet Audio*1</p> <p>Audio Encoding Method: PCM</p> <p>Audio Sampling Frequency: 48 kHz</p> <p>Audio Quantifying Bit Number: 16 bits</p> <p>Connection Device: VX-3004F, VX-3008F, VX-3016F, NX-300, VX-3000PM, VX-3000CT, Switching HUB</p> <p>Connector: RJ45 connector</p> <p>Connection Cable: Category 5 twisted pair cable (CAT5) or greater</p> <p>Number of Stages of Cascade connection: Up to 7</p> <p>Maximum Cable Distance: 100 m (328.08 ft)</p>
RS Link A, B	<p>Number of Connectors: 2 (RS LINK A, RS LINK B)</p> <p>Audio input level: 0 dB (*2) Power feed: Max. 1 A per connector</p> <p>Connector: RJ45 connector</p> <p>Connection Cable: Shielded Category 5 twisted pair cable (CAT5) or greater</p> <p>Maximum Cable Distance: 1200 m (3937.01 ft)</p>
DS Link	<p>Connection Device: DS LINK of Power supply units</p> <p>Connector: RJ45 connector</p> <p>Connection Cable: Shielded Category 5 twisted pair cable (CAT5-STP) or greater</p> <p>Maximum Cable Distance: 5 m (16.4 ft)</p>
Analog Link	<p>Number of Connectors: 1 input, 1 output</p> <p>Connection Device: VX-3004F, VX-3008F, VX-3016F</p> <p>Connector: RJ45 connector</p> <p>Connection Cable: Shielded Category 5 twisted pair cable (CAT5-STP) or greater</p> <p>Maximum Cable Distance: 800 m (2624.67 ft)</p>
Audio Input 1, 2, 3, 4	<p>4 inputs</p> <p>Sensitivity:</p> <p>LINE: -20 dB*2, MIC: -60 dB*2</p> <p>LINE/MIC/ANC Sensor (changeable with setting software)</p> <p>Gain Control: volume adjustable with volume control (internal front panel) $-\infty$ to 0 dB</p> <p>Input Impedance: 47 kΩ, electronically-balanced</p> <p>Frequency Response: 40 Hz to 20 kHz \pm1 dB (at DA CONTROL LINK, 0 dB output)</p> <p>Distortion: 1% or less (at DA CONTROL LINK, 0 dB output, 1 kHz)</p> <p>Signal to Noise Ratio: 60 dB or more (at DA CONTROL LINK, A-weighted)</p> <p>Phantom Power Supply: 24 V DC, can be set with setting software</p> <p>Connector: Removable terminal block (6 pins) x 2</p>
Control Input 1, 2	<p>16 inputs, no-voltage make contact input, open voltage: 24 V DC, short-circuit current: 2 mA,</p> <p>Fault Detection System: Short circuit, Open circuit, Method: Voltage detect</p> <p>Connector: RJ45 connector,</p> <p>Connection Cable: Shielded Category 5 twisted pair cable (CAT5-STP) or greater</p>
Emergency Control IN	<p>Input 2: Isolated voltage input, -24 to +24 V</p> <p>Connector: RJ45 connector</p> <p>Connection Cable: Category 5 twisted pair cable (CAT5) or greater</p>
VOX Function	<p>Threshold: -60 to 0 dB (1 dB steps)</p> <p>Hysteresis: 0 to +10 dB, Hold time: 10 ms - 10 s</p> <p>Settable for each audio input</p>

Control Output 1, 2	<p>General outputs: 8 with CONTROL OUTPUT 1</p> <p>Exclusive outputs: 3 with CONTROL OUTPUT 2 GENERAL FAULT, CPU FAULT, CPU OFF)</p> <p>No-voltage make contact, electrical contact output, control current: 10 mA, withstand voltage: 28 V DC</p> <p>Connector: RJ45 connector</p> <p>Connection Cable: Shielded Category 5 twisted pair cable (CAT5-STP) or greater</p>
ATT/Control Output	<p>8 outputs, no-voltage make contact, relay contact (NC, NO, C),</p> <p>control current: 2 mA to 5 A, withstand voltage: 125 V AC, 40 V DC</p> <p>Connector: Removable terminal block (12 pins) x 2</p>
Digital Signal Processing	
Feedback Suppressor (FBS)	<p>7 filters (auto),</p> <p>Settable for each audio input and RS LINK (A/B)</p>
Equalizer/Filter	<p>3 bands for each audio input and RS LINK (A/B), 6 bands for each amplifier output</p> <p>Parametric equalizer: 20 Hz – 20 kHz, ± 15 dB, Q: 0.267 – 69.249</p> <p>Filtering: High-pass filter 20 Hz – 20 kHz, 6 dB/oct, 12 dB/oct</p> <p>Low-pass filter 20 Hz – 20 kHz, 6 dB/oct, 12 dB/oct</p> <p>High shelving filter 6 – 20 kHz, ± 15 dB</p> <p>Low shelving filter 20 – 500 Hz, ± 15 dB</p> <p>Notch filter (amplifier output only) 20 Hz – 20 kHz, Q: 8.651 – 69.249</p> <p>All-pass filter (amplifier output only) 20 Hz – 20 kHz, Q: 0.267 – 69.249</p> <p>Horn equalizer (amplifier output only) 20 kHz, 0 to +18 dB (0.5 dB steps)</p>
Compressor	<p>Threshold: –20 to 0 dB (1 dB steps)</p> <p>Ratio: 1:1, 1.1:1, 1.2:1, 1.3:1, 1.5:1, 1.7:1, 2:1, 2.3:1, 2.6:1, 3:1, 4:1, 5:1, 7:1, 8:1, 10:1, 12:1, 20:1, ∞:1</p> <p>Attack time: 0.2 ms – 5 s</p> <p>Release time: 10 ms – 5 s</p> <p>Gain: $-\infty$ to +10 dB</p> <p>Knee type: hard knee, middle knee, soft knee</p>
Delay	For each amplifier output, 0 – 2730 ms (0.021 ms steps)
ANC (Ambient Noise Control)	<p>Amplifier output level control, Automatic sensor input reference level measuring,</p> <p>Sensor input reference level fine adjustment</p> <p>Maximum output signal level control: –15 to 0 dB</p> <p>Minimum output signal level control: –18 to –3 dB</p> <p>Sample time setting: 10 s, 20 s, 30 s, 1 min, 5 min</p> <p>Gain ratio setting: (Ambient noise: Output signal level) 6:3, 5:3, 4:3, 3:3, 3:4, 3:5, 3:6</p> <p>Ambient noise measuring frequency setting: 20 Hz – 20 kHz, 3 points</p>
Program Timer	<p>Weekly program method</p> <p>Daily program: 50 events, 10 types</p> <p>Holiday program: 50 types</p>
Time Adjustment	Control input, NTP
Speaker Line	<p>4 channels (with A/B LINE speaker output), 1 Earth terminal</p> <p>Maximum Voltage/Current: 100 Vrms, 5 Arms</p> <p>Connector: Removable terminal block (17 pins) ... 1</p> <p>Fault Detection System: Short circuit, Open circuit, Ground fault,</p> <p>Method: Impedance or End of line</p>
Standby Amplifier Input/Output	<p>Input: 1, Output: 1</p> <p>Maximum Voltage/Current: 100 Vrms, 5 Arms</p> <p>Connector: Removable terminal block (2 pins) x 2</p>
Module Slot	<p>Number of modules: 4</p> <p>DA CONTROL LINK x 4,</p> <p>DA OUTPUT LINK x 4 (Used only when a power amplifier module is installed)</p>

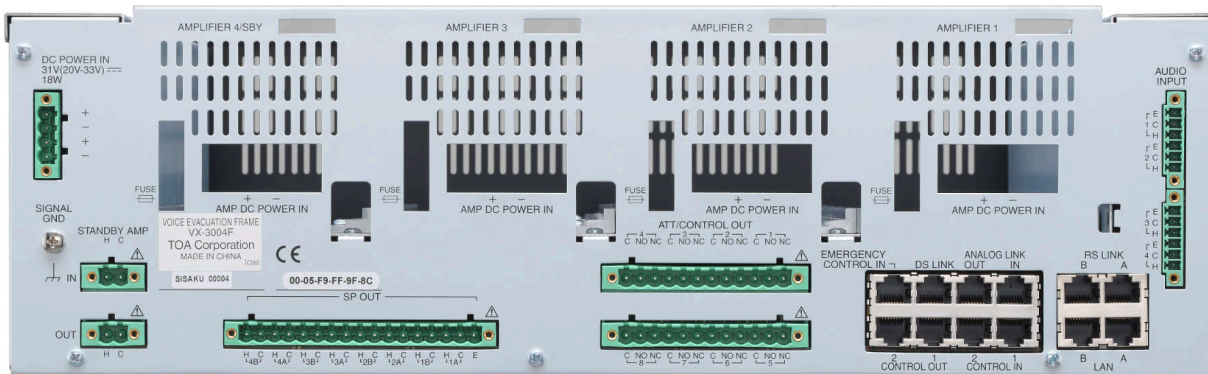
Indicators	POWER (green) x 1, RUN (green) x 1, EMERGENCY (red) x 1, CPU OFF (red) x1, LAN A (green) x 1, LAN B (green) x 1, RS LINK A (green) x 1, RS LINK B (green) x 1 FAULT STATUS (yellow): GENERAL x 1, UNIT x 1, NETWORK x 1, EMG MIC x 1, FUSE x 1, POWER x 1, CPU x 1, ZONE x 8 AMPLIFIER: PEAK (red) x 4, SIGNAL (green) x 4, OPERATE (green) x 4, POWER (green) x 4
Operation	Fault Control Switch x 2 (ACK/RESET) Test Switch x 1 (LAMP TEST) Setting Switch: ID NUMBER, RESET, IMPEDANCE, Setting (internal front panel)
Operating Temperature	-5 °C to +45 °C (23 °F to 113 °F)
Operating Humidity	90% RH or less (no condensation)
Finish	Panel: Surface-treated steel plate, black, 30% glossy, paint
Dimensions	483 (W) x 132.6 (H) x 345 (D) mm (19.02" x 5.22" x 13.58")
Weight	7.6 kg (16.75 lb)
Included Accessories	Rack mounting screw x 4, Removable terminal plug (2 pins) x 2, Removable terminal plug (4 pins) x 1, Removable terminal plug (6 pins) x 2, Removable terminal plug (12 pins) x 2, Removable terminal plug (17 pins) x 1, CD (PC setting software) x 1, Ferrite clamp x 3

(*1) TOA's unique technology which makes it possible to transmit high-quality audio signals in real time over an IP network.

(*2) 0 dB = 1 V

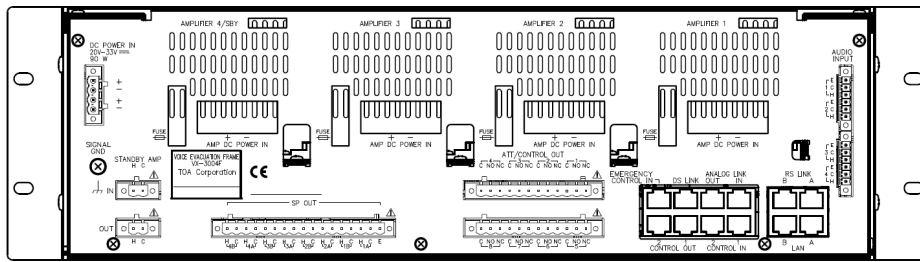
(*3) Module: Digital power amplifier module, Line output module

Product rear image

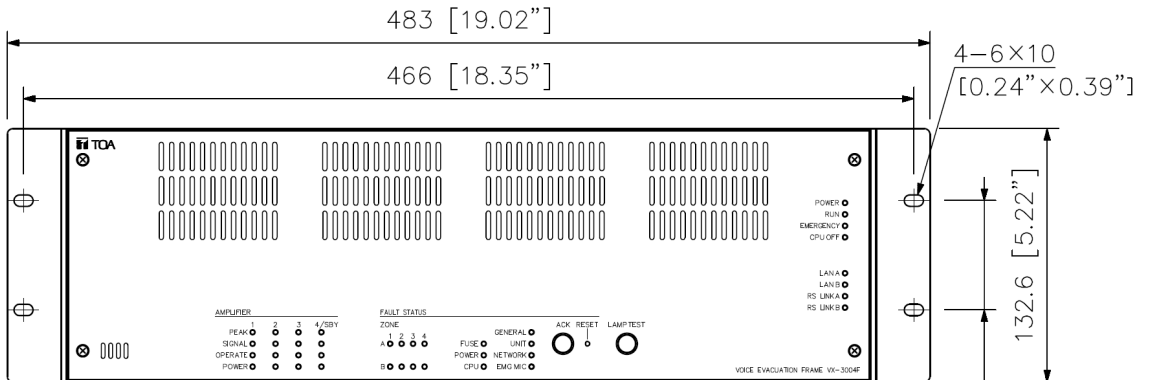


Dimensions

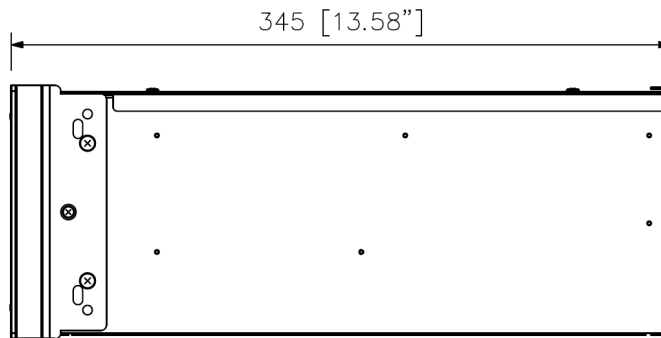
Rear View



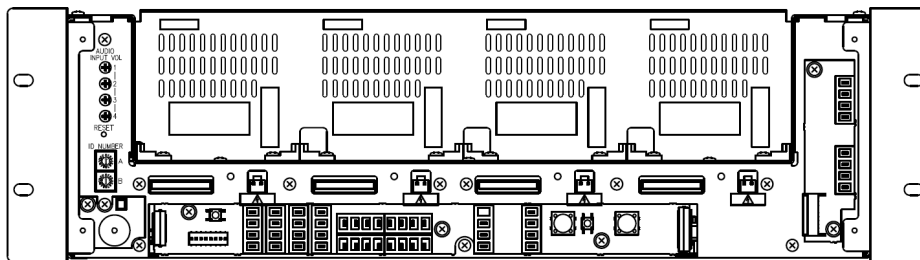
Front View



Side View



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Front view without front panel

UNIT:mm

A&E specifications

Frame for 4 amplifier modules with 4 monitored AB speaker outputs.

One amplifier module can optionally be configured as a standby amplifier.

Speaker line monitoring is possible by impedance surveillance or by using an end-of-line module.

Settings for impedance deviation to indicate an open or shorted line can be individually set for every output.

4 general balanced audio inputs (microphone/line level) and 2 inputs for up to 8 remote microphones including up to two emergency microphones.

The general audio signals of the audio inputs can be mixed.

All mandatory indications and controls regarding EN54-16 are on the front panel.

Fault indication for each speaker line.

Redundant network connection (Ethernet) of the frame with RSTP via two RJ45 ports.